

Taiwan official calls for approval of U.S. computer chip subsidies

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Taiwan's biggest semiconductor manufacturer has started building a computer-chip factory in Arizona and is hiring U.S. engineers and sending them to Taiwan for training, but the pace of construction will depend on Congress approving federal subsidies, a Taiwanese minister said Tuesday.

The message follows similar calls from U.S. chip manufacturers Intel and GlobalFoundries, which last week said that the delay in passing the subsidy legislation is slowing their investments in new factories in Ohio and New York.

A global shortage of semiconductors has prompted a scramble by many countries, including the United States, to build more chip manufacturing facilities. In May 2020, Taiwan Semiconductor Manufacturing Company, the world's largest chip manufacturer, agreed to build a \$12 billion facility in Arizona.

Aiming to incentivize that and other construction projects, the Senate last summer passed a bipartisan measure, known as the Chips Act, to spend \$52 billion on manufacturer subsidies. But that legislation is still held up in congressional wrangling.

"TSMC has already begun their construction in Arizona, basically because of trust. They believe the Chips Act will be passed by the Congress," Ming-Hsin Kung, minister of Taiwan's National Development Council and a TSMC board member, said in an interview in Washington.

But the speed of construction depends on the subsidies coming through, added Kung, who was in Washington to attend the annual SelectUSA foreign investment summit.

Once completed, the Arizona factory and a surrounding cluster of suppliers, including a Taiwanese chemical company that has also started investing in the site, will create several thousand jobs, Kung said.

One obstacle TSMC is encountering: There aren't enough trained semiconductor engineers in the area to staff the facility, Kung said. So the company has started sending new employees to Taiwan for training, including professionals skilled in other types of engineering, he said.

About 250 have already made the trip for training, including hands-on work at TSMC's chip factories. "They are not there only for lectures. They need to go on-site and be engaged in the operation," he said.

The United States and TSMC “want the U.S. facilities to operate as efficiently as the Taiwan facilities,” Kung said. “If not, that means TSMC [will] lose tons of money out of their investment.”

Taiwan is also keen to boost cooperation with the United States in other areas, including electric vehicles, biotechnology and 5G technology, the minister said, adding that he hoped Taiwan’s work to address the global chip shortage has shown that it is “a reliable partner in the global supply chain.”

Taiwan’s chip factories, operated by TSMC and others, were already working at full capacity but have managed to boost output by about 5 percent in recent months to try to alleviate the shortages, he said.

A lack of chips has hobbled many kinds of manufacturing worldwide, especially auto production, forcing factories to close for weeks at a time until they can get more chips.

Kung predicted that global supplies of auto chips in particular will remain strained for another year or two, and that total demand for all kinds of chips will continue to grow for another 10 to 20 years as more and more types of equipment and consumer goods become digital.

The rise of electric and autonomous vehicles will particularly strain chip supply because those cars require more chips, he said.

The Arizona factory will produce chips with transistors sized at five nanometers, a high-tech type of semiconductor used in consumer electronics but not in today’s autos. Automotive chips are usually manufactured according to older designs that are larger and less profitable for chip makers to produce, which is why they are in short supply. For comparison, the average human hair is about 60,000 nanometers thick.

About 75 percent of chip production today takes place in East Asia, and more than 90 percent of the most advanced chips are manufactured in Taiwan, an island China has regularly threatened to take by force if Taiwan’s democratically elected government declares legal independence.

Asked about this threat and how it influences Taiwan’s investment decisions, Kung said the island has been coping with this risk for 40 years.

“The risk certainly may be there, but we need to still develop our own economy and our own industrial supply chain even under such kind of potential risk,” he said.